

Paragraph beginning on page 6, line 24:

The words "and affixes to, via a shoe mounted cleat," are added to the definition of "clipless binding mode" to make clear that the shoe is attached to the pedal when operating in this mode.

Paragraph beginning on page 17, line 2:

The erroneous phrase "contacts and engages" is changed to "attaches to" in reference to a cleat used with a binding in clipless binding mode. The word "primarily" is substituted for the word "only" to remove the non-essential condition of having no shoe contact with the binding or shoe cleat contact with any part of the pedal when operating in unbound mode.

Paragraph beginning on page 20, line 34:

The word "furthermore" is inserted to clearly separate the non-essential condition (of having no cleat contact with any part of the pedal) from the essential requirement (of having the shoe unattached to the pedal) for operation of the pedal in unbound mode, and to remove any contrary implication or interpretation. The element "pedal spindle **112**" is changed to "spindle **112**" to be consistent with the previously defined term for this element.

Paragraph beginning on page 21, line 6:

The word "linkage" is substituted for the word "mechanism", which was erroneously used to denote the linkage (**43**) described elsewhere in the specification, even though the two terms are equivalent. The word "last" is inserted to remove an ambiguous reference to one of the alternate embodiments. Similarly, the words "and

first alternative" are inserted to remove a similar ambiguity. The word "continuous" is substituted for the word "contiguous", which was erroneously used to denote two or more elements formed as a single body, either rigid or flexible. The sentence describing the possible use of non-sole recessed cleat and binding systems is deleted, as being redundant to a prior statement in the paragraph. Other minor editorial corrections are made.

**Claims:**

Claims 1-6 remain in this application. Claim 7 is canceled. Claims 8-29 are added. Claims 1,3,4, and 5 are amended.

The above mentioned amendments to previous claims are necessary to correct minor editorial errors, and, in the case of claim 1, to both clarify definitions and to remove an erroneously made restriction, thusly expanding it's scope to be consistent with that of the specification.

In claims 1,3,4, and 5, the substitutions of the word "said" for either of the words "a" or "the" is to remove confusion and remain consistent with the practice of using "said" to refer to previously named and described elements. Also, in these claims, the element "pedal spindle" is changed to "spindle" to be consistent with the name used in the specification (spindle 12).

In claim 1, a new definition of "relative height" is substituted for the previous definition which was vague and relied heavily on the specification to make clear. No essential change in the definition is intended. In the new definition, heights of both "shoe supporting surfaces " and "clipless shoe bindings" are defined in a more precise manner antecedent to section (d) wherein the novel features of the invention are claimed.

In claim 1, the definitions of both "clipless binding mode" and "unbound mode" are modified to be consistent with the definitions for these terms given on page 1 of the

specification, under the first paragraph in the section entitled "Background-Field of Invention", and elsewhere. More specifically, the term "unbound mode" simply means that the pedal securely supports a rider's shoe without it being attached to the pedal in any way other than by friction between at least a shoe supporting surface (or set of surfaces) and the sole of a rider's shoe. The further condition of having no cleat contact with a binding when the pedal is operated in unbound mode was erroneously made in claim 1 and is not an essential requirement; it is thusly deleted from claim 1 and made subordinate to claim 1 as the the subject of a new and separate dependent claim (claim 9). The words "at least" are added to the phrase "shoe supporting surface" to be consistent with the removal of this restriction, and allow the possibility of having a binding serve as part of a shoe supporting surface, when the binding is retracted or otherwise configured for use in unbound mode. In a similar manner, clipless binding mode is simply defined as having a shoe attached to the pedal, by a cleat affixed to its sole, which engages and attaches to a binding which itself is attached to, or made a part of the pedal. The further condition of having no shoe sole contact with the pedal, for operation of the pedal in clipless binding mode, was also erroneously made in claim 1, and is not an essential requirement; it is thusly deleted from claim 1 and made subordinate to claim 1 as a new and separate dependent claim (claim 10). The word "securely" is added to the definition of unbound mode to distinguish the true and fully functional unbound mode of this invention from the very limited, inadequate, uncomfortable, insecure, and unsafe unbound functionality claimed in the inventions of Hanamura, U.S. Patent #5,771,757 (1998), and Ueda, U.S. Patent # 5,784,931 (1998), and any other equivalents, as is previously described in the specification.

In claim 1, the described action of a binding comprising a mechanism which "engages and affixes to" a cleat is simplified to read that the mechanism simply "attaches to" a cleat. This is to clear up any possible confusion as, in practical terms, it is the rider who "engages" the cleat with the binding, whereas it is the binding which affixes or attaches to the cleat. No actual change in the action of the binding is intended.

In claim 5, the words " upon release" are added, which were inadvertently

omitted in the original application. The phrase "cleat" is substituted for the previous phrase "clipless shoe binding cleat" to be consistent with terminology.

Claim 7 is canceled to avoid negative declaration. It's scope is covered in new claims 11 and 22.

Claim 8 is added to expand, by reification, the scope of claim 1 to be consistent with the scope of possible design variations described in the Conclusions, Ramifications and Scope section of the specification.

Claim 9 is added to cover embodiments of claim 1 that incorporate the additional condition of having no shoe cleat contact with the pedal when operating in unbound mode.

Claim 10 is added to cover embodiments of claim 1 that incorporate the additional condition of having no shoe sole contact with the pedal when operating in clipless binding mode.

Claim 11 is added to expand the scope of claim 1 to more literally encompass the equivalents mentioned in the Conclusions, Ramifications, and Scope section of the specification, and other equivalents. For instance, claim 11 is written to allow use of a non-sole-recessed cleat, in order to be consistent with the equivalent mentioned in the Conclusions, Ramifications, and Scope section of the specification. Claim 11 is also added to more literally encompass the detailed equivalent mentioned in the Conclusions, Ramifications, and Scope section as a variation of the last alternative embodiment, by allowing any linkages to act only on those parts of the bindings and/or platforms that are necessary to achieve the needed height variability. Claim 11 is also written to encompass the scope of previous (here canceled) claim 7, which was erroneously made with a negative declaration dependency on claim 1. Claim 11 also substitutes the element: "platform having a shoe supporting surface" for the element: "shoe supporting surface" to provide a generalized physical alternative element that is equivalent to a shoe supporting surface. Such a platform may be a pedal body, or a set of rail cages, as described in the embodiments of this application, or it may be a separate element of an equivalent embodiment. Claim 11 also allows equivalents that might

utilize multiple height variability linkages in substitution for the single linkage of the invention. Claim 11 utilizes a more general definition for the height of a clipless binding that allows for binding motions or configurations whose "uppermost surfaces" may change upon retraction or extension and be difficult to determine. For example, the aforementioned variation of the last alternative embodiment utilizes a rotation of both binding and unbound shoe supporting parts to achieve relative height variability which may make different surfaces become "uppermost", upon retraction or extension, unlike the preferred embodiment which utilizes a translation (without rotation) of the binding, thereby keeping the "uppermost surfaces" constant in all positions.

Claims 12 through 21 are added to provide dependent claims to claim 11 that are the equivalent of those claims dependent on claim 1, including new claims 8-10. Claim 14 is added to provide a dependent claim to claim 13 that is the equivalent of claim 6, which is dependent on claim 1. Claim 14 is intended to reify the detailed example of an alternate equivalent of the last alternative embodiment given in the Conclusions, Ramifications, and Scope section of the specification. Claim 20 is the equivalent of claim 9, but written to allow non-sole recessed cleat contact with parts of the pedal other than the binding, as would necessarily be the case with such a cleat under realistic use.

Claim 22 is added to more simply and clearly state the scope of the preferred embodiment of the invention in terms of its essential elements and functionality.

Claim 23 is added to provide a dependent claim to claim 22 that is the equivalent of claim 5, which is dependent on claim 1.

Claim 24 is added to provide an alternative version of claim 22, which restricts the means for extending the bindings out of, and retracting them into the body to be a mechanism or plurality of mechanisms.

Claim 25 is added to provide a dependent claim to claim 24 that is the equivalent of claim 5, which is dependent on claim 1.

Claim 26 is added to provide a dependent claim to claim 24 that is the equivalent of claim 9, which is dependent on claim 1.

Claim 27 is added to provide a dependent claim to claim 24 that is the equivalent

of claim 10, which is dependent on claim 1.

Claim 28 is added to provide a dependent claim to claim 24 that is the equivalent of claim 2, which is dependent on claim 1.

Claim 29 is added to more literally encompass equivalents that might separate the provisions for rotatably mounting the bindings and the unbound shoe supporting means to the spindle from the provision of a means for providing relative height variability between the bindings and unbound shoe supporting means. The last alternative embodiment is an example of an invention which would read well under this claim.

Since addition of these claims exceeds twenty claims total, an additional fee for those claims in excess of twenty is enclosed. Also, since the number of independent claim now exceeds three, an additional fee for those additional independent claims over three is enclosed.

Attached hereto is a marked-up version of the changes made to the specification and claims of the original application by this current amendment. The attached pages are entitled "Version With Markings To Show Changes Made".




Application Number: 09/918580

**Conclusion:**

For the reasons given above, Applicant respectfully submits that the specification and claims are now in proper form, and that all claims define patentability over the prior art. Therefore, Applicant submits that this application is now in condition for allowance, which action Applicant respectfully solicits.

Very Respectfully

  
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December 10, 2002

Derek Shuman, Sole Applicant





**Version with markings to show changes made**

**In the Specification:**

Paragraph beginning on page 6, line 24 has been amended as follows:

A bicycle pedal having both clipless shoe retention mechanisms (bindings) and full load bearing shoe supporting surfaces on each opposing side of the pedal, wherein the relative height between the clipless binding and the shoe supporting surface of each side of the pedal is sufficiently variable, such that the cyclist's shoe either rests and is supported fully on either of the shoe supporting surfaces to provide unbound operation, without the riders shoe being attached to the pedal, or ~~engages~~ attaches to, via a shoe mounted cleat, either of the bindings to provide clipless binding operation, as desired. The setting of the relative height between the bindings and shoe supporting surfaces is effected on both sides of the pedal, simultaneously, upon a single actuation performed by the cyclist. The setting of the relative height between the bindings and shoe supporting surfaces can be quickly and easily accomplished by the cyclist, without looking down, even while riding (coasting). The cyclist may also set the pedal, while engaged to the binding, to automatically change to unbound mode, on both sides of the pedal simultaneously, immediately upon the release of the shoe cleat from the binding. In a further embodiment, only one side of the pedal features a clipless binding and a shoe supporting surface which are relatively variable in height; the other side of the pedal features a fixed shoe supporting surface only. The aforementioned feature providing automatic change to unbound mode upon shoe release may be combined with this embodiment.

Paragraph beginning on page 17, line 2 has been amended as follows:

Though the motion of bindings **32** relative to shoe supporting surfaces **15** is

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arcuate, it is the height of the top surfaces of each binding **32** relative to the height of the corresponding shoe supporting surface **15** which determines whether the pedal can be used in either a clipless binding mode, with a cycling shoe **27** having a sole **28** recessed cleat **31** ~~contacting and engaging~~ attaching to ~~only~~ a clipless binding **32**, or in an unbound mode where a cycling shoe **27**, or other shoe contacts primarily ~~only~~ a shoe supporting surface **15** and is otherwise unattached to the pedal. This relative height can be generally defined as the difference in height of a plane parallel to the rotation axis of ~~pedal~~ spindle **12** and tangent to shoe supporting surface **15**, at the point of shoe sole **28** contact, and the height of a plane similarly parallel to ~~pedal~~ spindle **12** rotation axis and tangent to the uppermost facing surfaces of a binding **32** at a similar point of shoe **27** or cleat **31** contact. Thusly, pedal body **14**, pins **38F** and **38R**, links **42**, pins **44**, springs **45**, clips **46** and **50**, pins **48**, springs **54**, release plates **58A** and **58B**, pins **60** and **62**, comprise the primary parts of a rider actuated linkage **43** (fig.3A) that stably supports and connects bindings **32** to shoe supporting surfaces **15** in a relative variable height configuration.

Paragraph beginning on page 20, line 34 has been amended as follows:

Thusly, body **114**, bearings **116** and **118**, pivot journals **150** and **154**, extension lock pins **168L**, **168R**, retraction lock pin **182**, front rail cage assembly **148**, and rear rail cage assembly **149** comprise the primary parts of a rider actuated linkage **110** (fig. 11A) rotatably connecting both bindings **132** and shoe supporting surfaces **115** to ~~pedal~~ spindle **112** in a variable relative height configuration, sufficiently variable to allow the pedal to be used either as a clipless pedal on both sides of the pedal or as a unbound type pedal on both sides of the pedal, where the shoe is not attached to the pedal, and furthermore, recessed cleat **31** does not contact any part of the pedal.

Paragraph beginning on page 21, line 6 has been amended as follows:

The description above is detailed and specific, showing only several embodiments out of many possible ones which provide the same novel functionality. As such, the invention is not limited to the description in scope. For example, new materials or fabrication methods may be substituted for the suggested ones in the description, and parts may be changed in size and shape to reduce weight, ~~and~~ costs, to increase strength and durability, or to improve performance, especially in adverse conditions such as the presence of mud or dirt. For instance, in the preferred embodiment, shoe supporting surfaces **15** could be placed slightly higher (further apart from each other) and links **42** made slightly longer to retract bindings **32** further into pedal body **14**. This might provide better shoe sole grip for worn down shoe soles. It could allow the use of certain non-sole recessed cleat and binding systems by allowing the cleat to protrude into cutout **30**. There are other possible linkage ~~mechanism~~ configurations which provide similar functionality. As an example, it is possible to modify the last alternate embodiment by affixing bases **134** to rear rail connector plates **146L** and **146R**, and affixing bail pivot pins **138** to front rail side plates **144L** and **144R**, in order to provide height variability in both the binding and the shoe supporting surfaces. This slightly reduces the total height of the pedal when operating in unbound mode. It would also be possible, and obvious to combine the main features of both the preferred and first alternative embodiments with those of the last alternative embodiment, including the automatic conversion to unbound mode upon cleat release from the binding. There are other existing bindings possible which can be substituted, some of which are simple enough to be formed continuous ~~contiguous~~ with a connecting linkage. Other possible bindings exist which can be substituted that have no moving parts. ~~Other bindings which engage a non-sole recessed cleat may also be used to advantage, as the cleat could protrude slightly into cutout 30.~~ The shoe supporting surfaces **15**, of the preferred embodiment may be shaped differently than shown, such as flat, rather than curved. They may have less surface area shown, to provide extra clearance for muddy conditions. The shoe supporting surfaces of the preferred embodiment may consist of traditional cages,

similar to the last alternative embodiment, rather than broad surfaces, though this might limit its compatibility to certain types of shoe sole designs. The need to seal, or otherwise protect the moving mechanisms against dirt and water is obvious and the addition of features not described here can be anticipated, such as shaft seals for exposed rotating parts, flexible boots for exposed sliding parts, gaskets, surface hardening treatments, the addition of rolling elements to replace sliding surfaces or elements, dry-film surface lubrication treatments, surface corrosion protection treatments, surface texturing treatments, or features to provide better shoe grip, etc. The second alternative embodiment described here, having only one binding, but retaining some of the parts necessary for operation with two bindings can obviously be simplified for cost savings, at the expense of being easily convertible to the preferred embodiment, by the simple addition of another binding. Similarly, the last alternative embodiment can be reconfigured to provide for lighter weight, lower cost, and to provide other improvements.

**In the claims:**

Claim 1 has been amended as follows:

1. A a pedal having:

- (a) a ~~pedal~~ spindle for attachment to a crankarm, having an axis of rotation,
- ~~(b) a clipless shoe binding on both an upper shoe-facing side, and a lower ground-facing side of said pedal spindle, said clipless shoe bindings being from the group of shoe bindings comprising a mechanism which engages and affixes attaches to a cleat mounted to and recessed within a shoe sole, each said binding having an uppermost surface or plurality of surfaces,~~
- (e- b) a shoe supporting surface on ~~both~~ an upper shoe-facing side of said spindle, and a second shoe supporting surface on a lower ground-facing side of said ~~pedal~~ spindle, each said shoe supporting surface being configured to at least partially surround in each a corresponding said clipless shoe binding on the same said side of said spindle, each said shoe supporting surface having a height

- defined as the perpendicular distance from said spindle axis to a first plane both parallel to said spindle axis and tangent to said shoe supporting surface at the general location of said shoe sole contact with said shoe supporting surface,
- (b-c) a clipless shoe binding on both an upper shoe facing side of said spindle, and a second clipless shoe binding on a lower ground facing side of said ~~pedal~~ spindle, said clipless shoe bindings being from the group of shoe bindings comprising a mechanism which engages and affixes attaches to a cleat mounted to and recessed within said shoe sole, each said binding having an uppermost surface or plurality of surfaces, each said binding having a height defined as the perpendicular distance from said spindle axis to a second plane parallel to said first plane on said corresponding same side of said spindle and tangent to said uppermost surface or plurality of surfaces of said corresponding clipless shoe binding, wherein the improvement comprises the addition of:
- (d) a rider actuated relative height variability linkage, rotatably affixed to said ~~pedal~~ spindle, connecting said shoe supporting surfaces and said clipless shoe bindings to said ~~pedal~~ spindle, which provides for sufficiently varying the relative height between each said clipless shoe binding and each said corresponding ~~said~~ shoe supporting surface on said ~~the~~ same side of said ~~pedal~~ spindle to either position and securely hold the said uppermost surface or plurality of surfaces of said clipless shoe bindings either sufficiently level with or lower than said corresponding shoe supporting surfaces to allow at least said ~~corresponding~~ shoe supporting surfaces to securely support said ~~a~~ shoe sole without attachment contact of either said sole or sole recessed cleat with on either of said ~~corresponding~~ clipless shoe bindings, hereby referred to as an unbound mode of operation, or to position and securely hold said clipless shoe bindings sufficiently higher than said corresponding shoe supporting surfaces to allow said sole recessed cleat to attach engage and affix to said clipless shoe bindings without contact of said shoe sole on said corresponding shoe supporting surface, hereby referred to as a clipless binding mode of operation., ~~said height being~~

~~defined generally as the shortest ( perpendicular ) distance from said pedal spindle axis to a plane both parallel to said pedal spindle axis and tangent to either said shoe supporting surface at the location of shoe sole contact or surfaces of clipless shoe bindings , at the location of shoe sole or cleat contact.~~

Claim 3 has been amended as follows:

3. The pedal of claim 1, wherein said rider actuated relative height variability linkage either extends said clipless shoe bindings above, or retracts said clipless shoe bindings sufficiently below said corresponding shoe supporting surfaces, to allow said ~~the~~ pedal to be used in either said clipless binding mode, or in said unbound mode, said shoe supporting surfaces being fixed in height relative to said ~~pedal~~ spindle axis.

Claim 4 has been amended as follows:

4. The pedal of claim 1, wherein said relative height variability linkage either extends said shoe supporting surfaces sufficiently above, or retracts said shoe supporting surfaces sufficiently below said corresponding clipless shoe bindings, to allow said ~~the~~ pedal to be used in either said clipless binding mode, or in said unbound mode, said clipless shoe bindings being fixed in height relative to said ~~pedal~~ spindle axis of said pedal.

Claim 5 has been amended as follows:

5. The pedal of claim 1, having additionally, a mechanism for automatically changing said ~~the~~ relative height of said clipless shoe bindings to be sufficiently level with or below said corresponding shoe supporting surfaces to allow usage of said ~~the~~ pedal in said unbound mode, upon release of said ~~clipless shoe binding~~ cleat from said clipless shoe binding.

Claim 6 has been amended as follows:

6. The pedal of claim 1, wherein each said shoe supporting surface comprises ~~is comprised of a plurality set~~ of surfaces to form a single shoe supporting surface.

Claim 7 has been canceled:

- ~~7. The pedal of claim 1, wherein said height variability linkage is present on only one side of the pedal, and a fixed height shoe supporting surface is present on the other side of the pedal.~~

Claims 8-29 are added:

8. The pedal of claim 1 wherein at least part of said clipless shoe bindings are continuous with at least part of said relative height variability linkage.
9. The pedal of claim 1 wherein said relative height variability is sufficient to allow said pedal to be operated in said unbound mode without contact of said cleat on said pedal.
10. The pedal of claim 1 wherein said relative height variability is sufficient to allow said pedal to be operated in said clipless binding mode without contact of said shoe sole on said pedal.
11. A pedal having:
  - (a) a spindle for attachment to a crankarm, having an axis of rotation,
  - (b) a platform for supporting a rider's shoe, on it's sole, on an upper shoe-facing side of said spindle, said platform having a shoe supporting surface, and a second

platform for supporting said rider's shoe, on an opposite lower ground-facing side of said spindle, said second platform also having a said shoe supporting surface, at least one said platform having a void for containing a binding present on the same said side of said spindle, each said platform having a height defined as the perpendicular distance from said spindle axis to a first plane parallel to said spindle axis and tangent to said shoe supporting surface at the general location of said shoe sole contact on said shoe supporting surface,

- (c) at least one binding deployable on said upper shoe-facing side of said spindle, and optionally, a second binding deployable on said opposite lower ground-facing side of said spindle, all said bindings being from the group of shoe bindings comprising a mechanism which attaches to a cleat mounted to said shoe sole, each said binding having a height defined as the perpendicular distance from said spindle axis to a second plane parallel to said first plane on said corresponding same side of said spindle and tangent to said binding, wherein the improvement comprises the addition of:
  - (d) at least one linkage, actuatable by said rider, rotatably affixed to said spindle, connecting at least part of each said platform to at least part of each said corresponding binding, whereby the difference in said height between each said binding and each said corresponding platform, may be varied sufficiently to either position and hold sufficiently secure all said bindings at a said height either sufficiently level with or lower than said corresponding platforms to allow at least any said platform to securely support said shoe sole, without attachment of said cleat with any said binding, hereby referred to as an unbound mode of operation, or to position and hold sufficiently secure all said bindings at a said height sufficiently higher than said corresponding platforms to allow said cleat to attach to any said binding, hereby referred to as a clipless binding mode of operation.

12. The pedal of claim 11, wherein said linkage or linkages, upon a single actuation

by a rider, operate to both change said difference in said height of both a said upper shoe facing binding relative to a said corresponding platform on said same upper shoe facing side of said spindle, and simultaneously, to change said difference of said height of a said lower ground-facing binding relative to a said corresponding platform on said same ground-facing side of said spindle.

13. The pedal of claim 11, wherein said linkage or linkages change said height of at least one said binding sufficiently to allow said pedal to be used in either said clipless binding mode, or in said unbound mode, said shoe supporting surfaces of said platforms being fixed in said height.
14. The pedal of claim 11, wherein said linkage or linkages change said height of at least one said platform sufficiently to allow said pedal to be used in either said clipless binding mode, or in said unbound mode, all said bindings being fixed in said height.
15. The pedal of claim 14, wherein at least one said shoe supporting surface comprises a plurality of surfaces to form a single shoe supporting surface.
16. The pedal of claim 11, having additionally, a mechanism for automatically changing said difference in said height of at least one said binding relative to a said corresponding platform to allow said pedal to be used in said unbound mode, upon release of said cleat from said binding to which said cleat was attached.
17. The pedal of claim 11, wherein at least one said shoe supporting surface comprises a plurality of surfaces to form a single shoe supporting surface.
18. The pedal of claim 11 wherein at least part of each said binding is continuous

with at least part of said linkage or linkages.

19. The pedal of claim 11 wherein at least part of each said platform is continuous with at least part of each said linkage or linkages.

20. The pedal of claim 11 wherein said linkage or linkages provide sufficient said difference in said heights between said platforms and corresponding said bindings to allow pedal to be operated in said unbound mode without contact of said cleat on said binding or bindings.

21. The pedal of claim 11 wherein said said linkage or linkages provide sufficient said difference in said heights between said platforms and corresponding said bindings to allow pedal to be operated in said clipless binding mode without contact of said shoe sole on said pedal.

22. A pedal having:

- a) a spindle for attachment to a crankarm, having an axis of rotation,
- b) at least one binding from the group of clipless shoe bindings comprising a mechanism which attaches to a cleat mounted to and recessed within a shoe sole,
- c) a body, rotatably attached to said spindle, said body having at least one shoe supporting surface, said body having at least one void for at least partially containing all said bindings, wherein the improvement comprises the addition of:
- d) a means for :
  - 1) attaching all said bindings to said body,
  - 2) retracting all said bindings sufficiently into all said voids of said body to allow at least all said shoe supporting surfaces to securely support said shoe sole without attachment of said cleat with either said binding, and for:
  - 3) extending and securing all said bindings sufficiently outward from all said voids of said body to allow said cleat to attach to any said binding.

23. The pedal of claim 22, having additionally, a means for automatically retracting all said bindings into all said voids of said body to allow at least all said shoe supporting surfaces to support said shoe sole, upon release of said cleat from said binding to which said cleat was attached.

24. A pedal having:

- a) a spindle for attachment to a crankarm,
- b) at least one binding from the group of clipless shoe bindings comprising a mechanism which attaches to a cleat mounted and recessed within to a shoe sole,
- c) a body, rotatably attached to said spindle, said body having at least one shoe supporting surface, said body having at least one void for at least partially containing all said bindings, wherein the improvement comprises the addition of:
- d) a mechanism or plurality of mechanisms for:
  - 1) attaching all said bindings to said body,
  - 2) retracting all said bindings sufficiently into all said voids of said body to allow at least all said shoe supporting surfaces to securely support said shoe sole without attachment of said cleat with any said binding, and for:
  - 3) extending and securing all said bindings sufficiently outward from all said voids of said body to allow said cleat to attach to all said bindings.

25. The pedal of claim 24, having additionally, a means for automatically retracting all said bindings into all said voids of said body to allow at least all said shoe supporting surfaces to support said shoe sole, upon release of said cleat from said binding to which said cleat was attached.

26. The pedal of claim 24 wherein all said mechanisms provide sufficient said retraction of all said bindings into all said voids of said body to allow said body to securely support said shoe sole on any of said shoe supporting surfaces

without contact of said sole recessed cleat on said pedal.

27. The pedal of claim 24 wherein all said mechanisms provide sufficient said extension of all said bindings outward from all said voids of said body to allow any said binding to attach to said sole recessed cleat without contact of said shoe sole on said pedal.
28. The pedal of claim 24, wherein all said mechanisms operate on all said bindings simultaneously, upon a single actuation by a rider.
29. A pedal for use with a rider's shoe, said rider's shoe having an attached sole recessed cleat, having:
- a) a spindle for attachment to a crankarm, having an axis of rotation,
  - b) at least one unbound shoe supporting means, rotatably attached to said spindle, having a shoe supporting surface or plurality of surfaces for supporting said rider's shoe, on said rider's shoe sole, said rider's shoe being otherwise unattached to said pedal, each said unbound shoe supporting means having a height defined as the perpendicular distance from said spindle axis to a first plane both parallel to said spindle axis and tangent to said shoe supporting surface or plurality of surfaces at the general location of said shoe sole contact with said shoe supporting surface or plurality of surfaces,
  - c) at least one binding from the group of clipless shoe bindings comprising a mechanism which engages and affixes to said cleat, also rotatably attached to said spindle, each said binding being generally disposed about said spindle in a shoe sole receiving position corresponding to a said unbound shoe supporting means, and having a generally outermost outward facing surface or plurality of surfaces in any given position, each said binding having a height defined as the perpendicular distance from said spindle axis to a second plane parallel to said first plane on said corresponding same side of said spindle and tangent to said

outermost outward facing surface or plurality of surfaces of said corresponding binding, wherein the improvement comprises the addition of:

- d) at least one mechanism, actuatable by said rider, acting on either all said bindings, and/or all said unbound shoe supporting means, to provide sufficient adjustment of the difference in said height between said outermost outward facing surface or surfaces of each said binding and each said corresponding unbound shoe supporting means to either position and hold sufficiently secure said outermost outward facing surface or surfaces of all said bindings at a said height either sufficiently level with or lower than all said shoe supporting surfaces of said corresponding unbound shoe supporting means to allow at least all said corresponding unbound shoe supporting means to securely support said shoe sole, without attachment of said cleat with any said binding, hereby referred to as an unbound mode of operation, or to position and hold sufficiently secure all said bindings at a said height sufficiently higher than said shoe supporting surface or surfaces of all said corresponding unbound shoe supporting means to allow said cleat to engage and affix to any said binding, hereby referred to as a clipless binding mode of operation.